



RIVER MILE 10.9 REMOVAL ACTION PERIMETER AIR MONITORING PROGRAM

Introduction

The Perimeter Air Monitoring Program (PAMP) is designed to protect nearby residents, recreational users of the park and park workers. The Perimeter Air Monitoring Program is a part of the Community Health and Safety Plan established for the Removal Action and approved by EPA.

The Perimeter Air Monitoring Program will start a few days prior to the start of dredging and continue until the completion of field work. There are two aspects of the air monitoring program: real-time air monitoring, which provides results immediately during the removal operations, and longer-term air sampling, which includes samples collected over a 24-hour period and sent to a laboratory for analysis. A map of the monitoring locations is provided below. Real-time air monitoring will occur during dredging/capping operations roughly 12-hours a day, 6-days a week. The longer-term twenty-four (24) hour samples will be collected 6-days a week. Some monitoring may be reduced or eliminated pending regulatory approval, if results warrant.

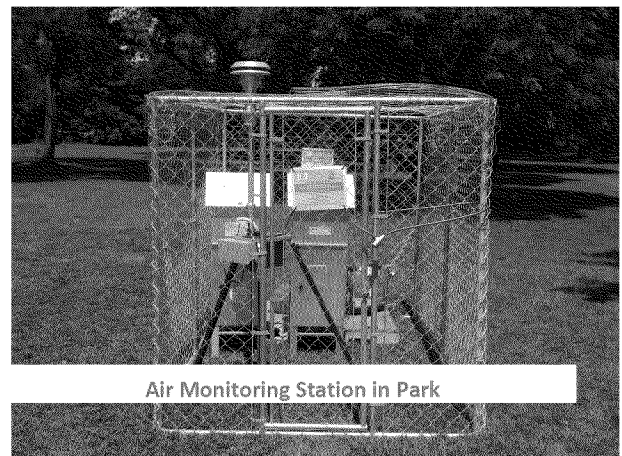
Real-time air monitoring supplemented by air sampling and analysis for target COPCs will be conducted. Off-site odor conditions will be monitored based on multiple sources of information including community concerns.

Program Objectives

The main objective of this program is to monitor air quality in the vicinity of Removal Action activities, determine if that quality exceeds EPA established monitoring and warning values, and if it does, investigate the cause(s) and initiate appropriate management responses. A response may include temporary cessation (stop work) of dredging and capping activities.

Potential Air Emissions

Due to the proximity of the public to the dredging and barge loading in the vicinity of RM 10.9, EPA and the New Jersey Department of Environmental Protection (NJDEP) requested that the CPG evaluate the potential of the dredging operations to emit air emissions (Potential to Emit (PtE)). Potential emissions were assumed to come from the dredged sediment. The modeling work concluded that the PtE for the Contaminants of Potential Concern (COPCs) present in the RM 10.9 sediment is below the NJDEP reporting threshold. The PtE for two of the primary COPCs at this project, dioxins and PCBs, were 3.5 and 4.5 times below that threshold, respectively.



Air Monitoring Station in Park

While modeling predicted emissions will not be an issue for this project, air monitoring is being conducted to confirm this prediction and assure the public is not adversely affected. The following types of air monitoring and sampling are being conducted.

Real-Time Volatile Organic Compound (VOC) Monitoring

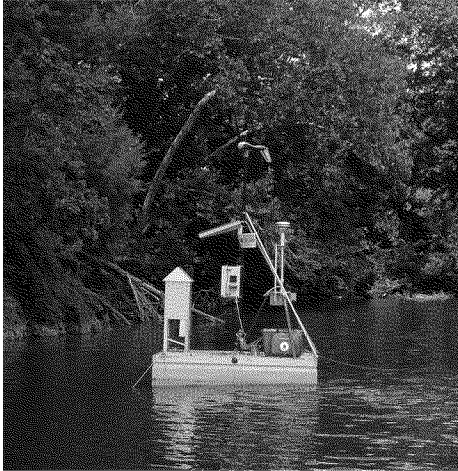
Air will be monitored in locations downwind of the dredging operations to ensure that total VOC concentrations at the work zone perimeter do not exceed the air quality control criteria established by EPA for this project of 10 parts per million (ppm) above background levels. To provide additional assurance, a lower early indicator level of 5 ppm has been established. Should the air monitors detect VOC concentrations exceeding the early indicator

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level for a 15-minute period, the source of the emissions will be investigated and evaluated. If VOC concentrations do approach or exceed the air quality control criteria, then mitigation measures will be implemented. Specifically, if a 15-minute average of 10 ppm is exceeded because of dredging activities, work will be stopped until corrective measures are implemented. Similar monitoring will also be conducted in locations downwind of the sediment stabilization facility located in Kearny.

Real-Time Hydrogen Sulfide (H₂S) Monitoring

Many sediment samples have been collected from the RM 10.9 area and the levels of hydrogen sulfide measured from them have been very low, with odor barely noticeable. Sensitive receptors can smell the "rotten egg" odor of H₂S at low concentrations in air 0.0005 ppm and 90 percent of people can smell it at levels of 0.05 ppm. The detection of H₂S at these levels creates a nuisance as opposed to a health risk condition.



Hydrogen sulfide monitoring will be conducted periodically at locations downwind of the dredging operations while dredging is occurring. If the hydrogen sulfide investigation criterion of 0.01 ppm is exceeded over a 15-minute period, the source of sulfide will be investigated. If the hydrogen sulfide action criteria of 0.02 ppm is exceeded over a 15-minute period, operations will be suspended until the hydrogen sulfide level returns to below the 0.01 ppm within 15-minute period or corrective measures are implemented, unless it can be demonstrated through investigation that dredging is not the cause of exceedance.

Real-Time Dust/Aerosol Monitoring

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River Air Monitoring Station

Dust will be monitored to ensure that concentrations at downwind locations of the dredging operations remain below the air quality criterion. air quality criterion for dust of 450 µg/m³ above background has been established by EPA for the project. To provide additional assurance, an early indicator level of 150 µg/m³ above background will be utilized. If this lower level is exceeded for a 15-minute period, the source of dust will be investigated. If the dust is from dredging operations, mitigation measures will be implemented. If the action criterion of 450 µg/m³ is exceeded, and it is due to the dredging/stabilization operations, then on-site activities that generated the dust will be stopped and there will be a re-evaluation of the activities.

Contaminants of Potential Concern Particulate and Vapor Sampling

In addition to the real-time monitoring of dust and vapors, samples of dust and vapors will be collected during 24-hour periods at four locations, one on the river and three in the park (IRS #1, PMS #1, #2, #3) which surround the dredging/capping operations; these samples will then be analyzed for select COPCs, including dioxin, PCBs and mercury. The results will be reviewed on an ongoing basis and compared to the risk-based criteria established for this project. If it is found that the criteria are approached or exceeded, then appropriate additional control measure will be implemented. Note that the risk-based criteria assume exposure at that concentration over the entire length of the project, so short-term results that approach or even exceed the target concentrations do not necessarily correlate to an increased risk to the community.

Barge Transport Monitoring

The barges used to transfer dredged sediment from RM 10.9 to the stabilization facility are part of the dredging operations and will be included in the air monitoring while at that location. The dredge material will be wet and may have a layer of water on top of it as the sediment settles to the bottom of the barge and residual water comes to the top. For this reason and as shown in the Potential to Emit calculations performed for NJDEP, emissions from the barged material are not expected to be a concern. The barges will remain at the Removal Area until they are ready for transport downriver to the stabilization facility. It is anticipated that barges full of dredged sediment will only be stationary for very short periods of time during the trip from RM 10.9 to the

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stabilization facility preventing downwind impacts. Initial air monitoring will be conducted before the first trip from RM 10.9 to the stabilization facility to assess the barge transport impact.

Noise Monitoring

Noise monitoring will consist of sound level measurements and will be performed manually by field personnel periodically while in the park attending to the air monitoring equipment. At a minimum, a reading will be collected once every three hours during the daytime 12-hour construction shift. Additional monitoring will be conducted if there are complaints of noise from people in the park or nearby residents. Routine monitoring will occur along the shoreline 100 feet north, 100 feet south and at the mid-point of the removal area. The New Jersey daytime maximum hourly noise average standard is 75 dB.

Meteorological Measurements

An on-site meteorological data collection station will be placed within the park near the RM 10.9 removal area. The weather station will continuously monitor and record the following: air temperature, air pressure, wind direction and speed, precipitation quantity and intensity and relative humidity. The wind direction and speed will be used to ensure that air monitoring stations are properly situated to monitor the dredging activities and to document the conditions during the removal action. Project personnel will have access to and routinely monitor other weather information sources such as the National Weather Service website and broadcasts as a backup to the on-site real-time weather station.

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